

# Work Order ID 48548

Friday, June 26, 2009 8:58:24 AM



Page 1

Item ID:	D350-591-214	Accept		Setup	Start	
Revision ID:	A				Stop	
Item Name:	Heli-Access-Step, Short RH					
Start Date:	7/15/2009	Start Qty:	5.00		Cust Item ID:	
Required Date:	8/3/2009	Req'd Qty:	5.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3078	Rev A

100		0.00							
	DOCUMENT CONTROL								
DC	Memo	0.00							
Document Control	Photocopy bluefile and type labels as per PPP D350-591-214 CHG002								

110		0.00							
	Large Fab								
Large Fab	Memo	0.00							
Large Fab	1-Cut D2622-120 extrusion to 59.75" long as per Dwg D3078 □2-Drill extrusion as per Dwg D3078 using Jig DT8680 for rivets. □3-Deburr								

120		0.00							
	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control									

# Work Order ID 48548

Friday, June 26, 2009 8:58:24 AM



Page 2

Item ID:	D350-591-214	Accept		Setup	Start	
Revision ID:	A				Stop	
Item Name:	Heli-Access-Step, Short RH					
Start Date:	7/15/2009	Start Qty:	5.00		Cust Item ID:	
Required Date:	8/3/2009	Req'd Qty:	5.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 	Large Fab	0.00				5			
Large Fab	Memo	0.00							
Large Fab	1-Bevel end for welding FWD ONLY □ 2-Weld Support using Jig DT8681, weld Fwd End Plate as per QSI 004 & Dwg D3078 □ A/RAluminum Rod <u>M110120</u> □ 3-Grind End Plate flush <u>M110972</u>				09-07-16				
140 	QC9- Inspect visual per QSI004- Fusion Welds	0.00							
QC	Memo	0.00							
Quality Control									
150 	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									

Sort 6/16

X5RH

**Work Order ID 48548**

Friday, June 26, 2009 8:58:24 AM

Page 3

Item ID: D350-591-214

Accept

Revision ID: A

Item Name: Heli-Access-Step, Short RH

Start Date: 7/15/2009 Start Qty: 5.00

Required Date: 8/3/2009 Req'd Qty: 5.00

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

170

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

180

Large Fab

0.00



Large Fab

Memo

0.00

Large Fab

Rivet Leg Assembly as per Dwg D3078.



Setup

Start

Stop

Cust Item ID:

Customer:

UMD 09/07/20

X5


LH 09.07.20



5




**Work Order ID 48548**

Friday, June 26, 2009 8:58:24 AM

Page 4

Item ID: D350-591-214 Accept  Setup Start   
Revision ID: A Stop   
Item Name: Heli-Access-Step, Short RH  
Start Date: 7/15/2009 Start Qty: 5.00  Cust Item ID:  
Required Date: 8/3/2009 Req'd Qty: 5.00  Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start   
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00	$\Rightarrow$	807/09/00		<u>45RH</u>	$\phi$		
200  Large Fab Large Fab	Large Fab  Memo 1-Bevel Aft end for welding <input type="checkbox"/> 2-Inspect for foreign object as per QSI 024 <input type="checkbox"/> 3- Weld Aft End Plate as per QSI 004 & Dwg D3078 <input type="checkbox"/> A/RAluminum Rod <u>m110130</u> <input type="checkbox"/> 4-Grind End Plate flush	0.00  0.00				5			
210  QC Quality Control	QC9- Inspect visual per QSI004- Fusion Welds  Memo	0.00  0.00							

*Handwritten notes:*  
09-07-21  
BE 09/07/21 5

# Work Order ID 48548

Friday, June 26, 2009 8:58:24 AM



Page 5

Item ID: D350-591-214

Accept



Setup Start



Revision ID: A

Stop



Item Name: Heli-Access-Step, Short RH

Start Date: 7/15/2009 Start Qty: 5.00



Cust Item ID:

Required Date: 8/3/2009 Req'd Qty: 5.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

220

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

2 > Sorkyler

SRH

230

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

SRH M-L 09/07/22

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

11:50

OVEN TEMPERATURE:

62. 09-07-23

320° FINISH TIME:

12:22

SRH

**Work Order ID 48548**

Friday, June 26, 2009 8:58:24 AM

Page 6

Item ID: D350-591-214

Accept

Revision ID: A

Item Name: Heli-Access-Step, Short RH

Start Date: 7/15/2009 Start Qty: 5.00

Required Date: 8/3/2009 Req'd Qty: 5.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250



HandFinish

Hand Finishing

Pressure Wash per OSI005 4.3

0.00

Memo

M111013

0.00

21

09-07-22

XS

260



QC

Quality Control

QC3- Inspect Part Finish

0.00

Memo

0.00

Pc9/7/29 (5)

270



Packaging

Packaging

Pick Kit

0.00

Memo

0.00

Pc9/7/28 (5)

**Work Order ID 48548**

Friday, June 26, 2009 8:58:24 AM

Page 7

Item ID: D350-591-214

Accept

Setup Start

Revision ID: A

Stop

Item Name: Heli-Access-Step, Short RH

Start Date: 7/15/2009 Start Qty: 5.00

Cust Item ID:

Required Date: 8/3/2009 Req'd Qty: 5.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

290

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D350-591-  
214 □ Location: 80 □ PPP Rev: D

300

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

Handwritten: 4502H

Handwritten: 9/7/09 (SX) SD

Handwritten: 09/07/31

Handwritten: MF 09-07-30

# Picklist Print

Page 1

Friday, June 26, 2009 8:58:24 AM

Work Order ID: 48548

Parent Item: D350-591-214RevA

Parent Item Name: Heli-Access-Step, Short RH

Comments:

Start Date: 7/15/2009

Required Date: 8/3/2009

Start Qty: 5.00

Required Qty: 5.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ MS21042L4 <i>6</i>		Purchased	No			110	Each	0.0000	30.0000 <i>6x</i>			
<i>6</i> Nut												
✓ D2622-120CRevC1		Manufactured	No			130	Each	0.0000	2.5000			
Step Extrusion												
✓ D3067-1RevA		Manufactured	No			130	Each	0.0000	5.0000			
End Plate												
✓ D3063-1RevA		Manufactured	No			180	Each	0.0000	5.0000			
Support												
✓ D3065-041RevB		Manufactured	No			180	Each	0.0000	5.0000			
Step Leg Assembly Hi												
✓ D3066-1RevB		Manufactured	No			180	Each	0.0000	10.0000			
Spacer												
✓ MS20600-AD4W4		Purchased	No			200	Each	0.0000	80.0000			
Rivets												
<i>5</i> ✓ AN3-35A <i>+ 2</i>		Purchased	No			280	Each	0.0000	10.0000 <i>2x</i>			
Bolt												
<i>5</i> ✓ AN4-11A <i>+</i>		Purchased	No			280	Each	0.0000	30.0000 <i>dep</i>			
Bolt												

*m110507 (30) CE*

*346910 LE*

*348242 LE*

*344162 LE*

*347090 = 4 348113 = 1 LE*

*348414 LE*

*m111477 LE*

*m110467 (10) CE*

*m106605 (30) CE 9/7/28*



# Picklist Print

Page 2

Friday, June 26, 2009 8:58:24 AM

Work Order ID: 48548

Parent Item: D350-591-214RevA

Parent Item Name: Heli-Access-Step, Short RH










Comments:

Start Date: 7/15/2009

Required Date: 8/3/2009

Start Qty: 5.00

Required Qty: 5.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ AN4-13A 		Purchased	No			280	Each	0.0000	20.0000 4x			
Bolt ✓ AN960JD10 		Purchased	No			280	Each	0.0000	20.0000 4x			
Washer ✓ AN960JD416 		Purchased	No			280	Each	0.0000	60.0000 12x			
Washer ✓ D2230-1RevF 		Manufactured	No			280	Each	0.0000	10.0000 2x			
Lug ✓ D2230-3RevF 		Manufactured	No			280	Each	0.0000	10.0000 2x			
Lug ✓ D2732RevB1 		Manufactured	No			280	f	0.0000	5.0000			
Rubber Extrusion ✓ D2856-400RevA 		Manufactured	No			280	f	0.0000	3.0000			
Abraison Strip ✓ D3067-1RevA 		Manufactured	No			280	Each	0.0000	5.0000			
End Plate ✓ MS21042L3 		Purchased	No			280	Each	0.0000	10.0000 1x			
Nut												

M111925 (20) L

M111668 (20) L

M111279 (60) L

48229 (10) L

47965 (8x) 48384 (2x) B

43118 L

46543 L

~~48242~~ B 48242 1/4

M105558 (6x) 4x

(C912/28(5))

Friday, June 26, 2009 8:58:24 AM

Shop Packet Print

Page 2

Date: Friday, 12/06/2009 9:56:17 AM  
 User: Julie Dawson

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : SHORT STEP ASSEMBLY HIGH SKID RH
<b>Job Number</b> : 48548	
<b>Estimate Number</b> : 10720	
<b>P.O. Number</b> :	<b>Part Number</b> : D350591214
<b>This Issue</b> : 12/06/2009 <b>S.O. No.</b> :	<b>Drawing Number</b> : D3078 REV A
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : / / <b>Type</b> : LARGE FAB ASSY	<b>Drawing Revision</b> : A
<b>Previous Run</b> : 48148	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 26/06/2009 <b>Qty:</b> 5 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <u>Julie Dawson</u>	
<b>Comment</b> : Est Rev:B 05.10.14 Modified step 10 KJ/EC	
Est Rev:C 06-06-19 Added D2732-030 AS PER DSI9294 JLM	
Est Rev:D 06-06-27 Revised as per DSI9340 JLM	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
----------------	------------------------------	----------------------

1.0 ✓ DC

DOCUMENT CONTROL

**Comment:** DOCUMENT CONTROL

Photocopy bluefile and type labels as per PPP D350-591-214 CHG002

2.0 ✓ D2622120C

Step Extrusion

**Comment:** Qty.: 0.5000 Each(s)/Unit Total : 2.5000 Each(s)

Pick:

Qty Part Number

Description Batch

.5 D2622-120

Extrusion

346910

SAD

09-07-01 (5)

3.0 LARGE FAB 1

LARGE FABRICATION RESOURCE 1

**Comment:** LARGE FABRICATION RESOURCE 1

1-Cut D2622-120 extrusion to 59.75" long as per Dwg D3078

2-Drill extrusion as per Dwg D3078 using Jig DT8680 for rivets.

3-Deburr

SAD

09-07-01 (5)

4.0 QC5

INSPECT WORK TO CURRENT STEP

**Comment:** INSPECT WORK TO CURRENT STEP

C

01/07/01

(5)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:56:17 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID RH

Job Number: 48548

Part Number: D350591214

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

D30671

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

Pick:

Qty Part Number

Description Batch

1 D3067-1

End Plate

48242 ✓

PH 09.07.16 5

6.0

D30631

Support



Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

Pick:

Qty Part Number

Description Batch

1 D3063-1

Support

B44162 ✓

PH 09.07.16 5

7.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel end for welding FWD ONLY

2-Weld Support using Jig DT8681, weld Fwd End Plate as per QSI 004 & Dwg D3078

A/R Aluminum Rod

M110130  
M110972

3-Grind End Plate flush

PH 09.07.16 5  
PH 09.07.16 5  
PH 09.07.16 5

8.0

QC9

VISUAL WELDING INSPECTION



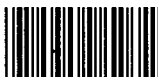
Comment: VISUAL WELDING INSPECTION

PD 09.07.16

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8.09/07/16 (524)

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

WMD 09/07/20 (X5)

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:56:17 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID RH

Job Number: 48548

Part Number: D350591214

Job Number:



Seq. #: Machine Or Operation: Description :

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*PK 09-07-20 (B)*

12.0

D3065041

Step Leg Assembly Hi



Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D3065-041

Step Leg Assy

*B47090=4*

*B48113=1*

*PK 09-07-20 5*

13.0

D30661

Spacer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

2 D3066-1

Spacer

*B48414*

*PK 09-07-20 5*

14.0

MS20600AD4W4

Rivets



Comment: Qty.: 16.0000 Each(s)/Unit Total : 80.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

16 MS20600AD4W4

Rivet

*1111477*

*PK 09-07-20 5*

15.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

Rivet Leg Assembly as per Dwg D3078.

*PK 09-07-20 5*

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*S 09/07/20 (X5RH)*

17.0

D30671

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D3067-1

End Plate

*B48242*

*PK 09-07-21 5*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:56:17 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID RH

Job Number: 48548

Part Number: D350591214

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel Aft end for welding

2-Inspect for foreign object as per QSI 024

3-Weld Aft End Plate as per QSI 004 & Dwg D3078

A/R Aluminum Rod M110130

4-Grind End Plate flush

*HE 09-07-21 5*  
*HE 09-07-21 5*  
*HE 09-07-21 5*  
*HE 09-07-21 5*

19.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

*BE 09-07-21 5*

20.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*Sortal (SRM)*

21.0



HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Touch Up Chemical conversion

22.0



POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME: \_\_\_\_\_

OVEN TEMPERATURE: \_\_\_\_\_

FINISH TIME: \_\_\_\_\_

23.0



HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk as per Dwg D3078 and QSI 005 4.4



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:56:17 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID RH

Job Number: 48548

Part Number: D350591214

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

✓ QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: Inspect Powder Coat and Wing Walk

25.0

✓ PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

26.0

✓ D22303

Lug



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2 D2230-3

Clamp

27.0

✓ D22301

Lug



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2 D2230-1

Clamp

28.0

✓ D2732

Rubber Extrusion



Comment: Qty.: 1.0000 f(s)/Unit Total : 5.0000 f(s)

Rubber Extrusion

4 X 3"

Batch:

29.0

✓ D2856400

Abrasion Strip



Comment: Qty.: 0.6000 f(s)/Unit Total : 3.0000 f(s)

Pick: Packing Kit

Qty Part Number Description Batch

1 D2856-400(7.2")

Abrasion Strip

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:56:18 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID RH

Job Number: 48548

Part Number: D350591214

Job Number:



Seq. #:

Machine Or Operation:

Description :

30.0

✓ AN335A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2 AN3-35A Bolt

31.0

✓ AN411A

Bolt



Comment: Qty.: 6.0000 Each(s)/Unit Total : 30.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

6 AN4-11A Bolt

32.0

✓ AN413A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 20.0000 Each(s)

Bolt

Batch: \_\_\_\_\_

33.0

✓ AN960JD10

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

4 AN960JD10 Washer

34.0

✓ AN960JD416

Washer



Comment: Qty.: 12.0000 Each(s)/Unit Total : 60.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

12 AN960JD416 Washer

35.0

✓ MS21042L3

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

2 MS21042L3 Nut (or -3)

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 12/06/2009 9:56:18 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY HIGH SKID RH

Job Number: 48548

Part Number: D350591214

Job Number:



Seq. #:

Machine Or Operation:

Description :

36.0

✓ MS21042L4

Nut



Comment: Qty.: 6.0000 Each(s)/Unit Total : 30.0000 Each(s)

Pick: Packing Kit

Qty Part Number Description Batch

6 MS21042L4

Nut (or -4)

37.0

✓ QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

38.0

✓ PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-591-214

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

39.0

✓ QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion ✓



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. <b>D3078</b>	REV. A SHEET 1 OF 2
DATE <b>02.09.11</b>		TITLE <b>STEP ASSEMBLY, HI SHORT</b> SCALE NTS	
A	02.09.11	NEW ISSUE	

**RELEASED**  
02.09.20 *#*

Part No.	Description	QTY -041	QTY -042
D3078-041	Step Assembly, High Short (LH)	X	
D3078-042	Step Assembly, High Short (RH)		X
D2622-60	STEP EXTRUSION	1	1
D3063-1	SUPPORT	1	1
D3065-041	LEG ASSEMBLY	1	1
D3066-1	SPACER	2	2
D3067-1	END PLATE	2	2
MS20600AD4W4	RIVET	16	16

**GENERAL NOTES:**

- 1) -041 SHOWN, FOR -042 INSTALL D3063-1 SUPPORT OPPOSITE SIDE
- 2) WELD PER DART QSI 004
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT ASSEMBLY WHITE (4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. **48548**

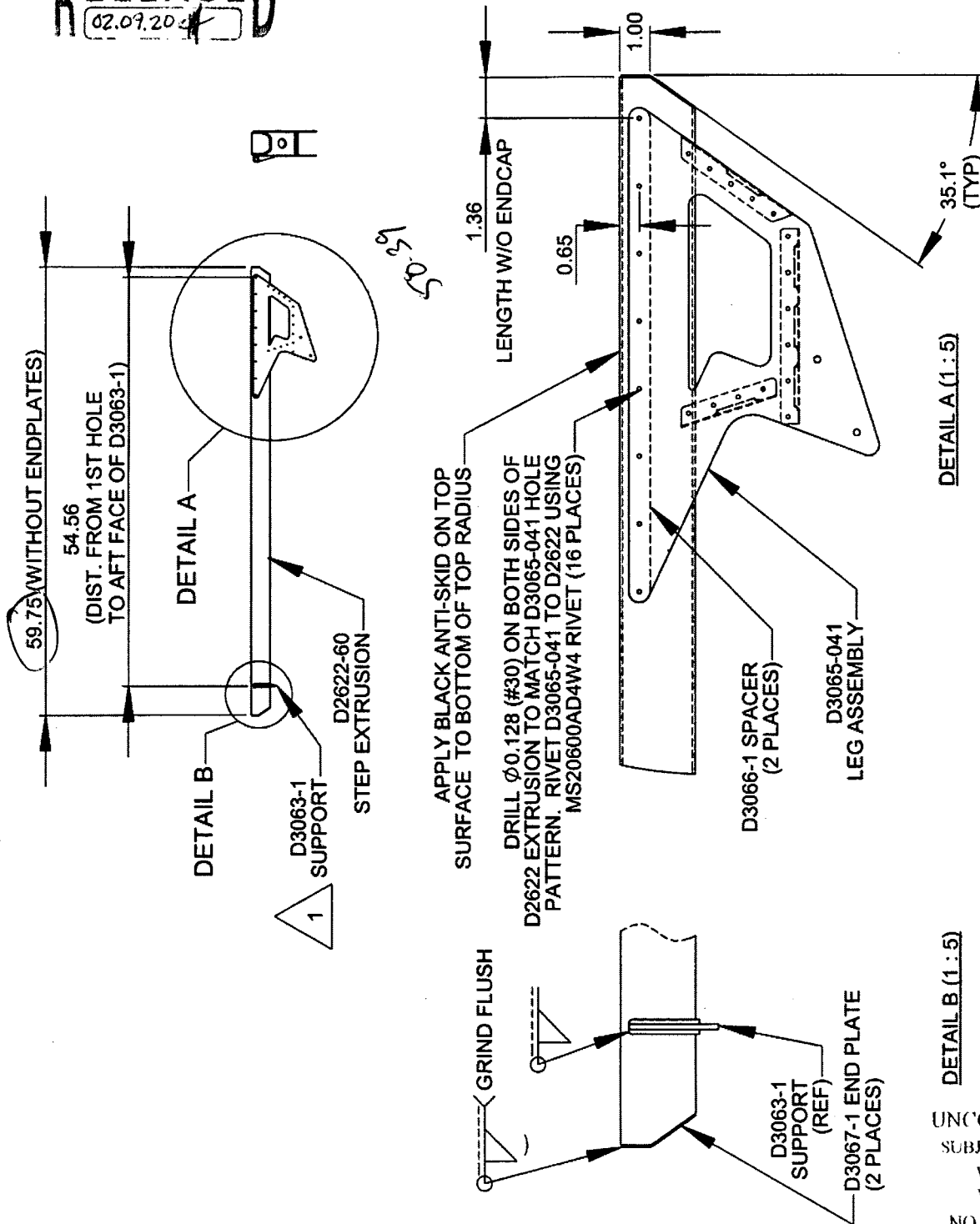
**COPYRIGHT © 2002 BY DART AEROSPACE LTD.**

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.



**DART**

DESIGN <i>UP</i>	DRAWN BY <i>UP</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. <b>D3078</b>	REV. A SHEET 2 OF 2
DATE <b>02.09.11</b>	TITLE <b>STEP ASSEMBLY, HI SHORT</b>		SCALE 1:20

**RELEASED**  
02.09.2011

COPYRIGHT © 2002 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Qty -211	Qty -212	Qty -213	Qty -214	Qty -215	Qty -216	Qty -311	Qty -312	Part Number	Description
X								D350-591-211	<i>Heli-Access-Step</i> ™, Long Step – High Skid, LH
	X							D350-591-212	<i>Heli-Access-Step</i> ™, Long Step – High Skid, RH
		X						D350-591-213	<i>Heli-Access-Step</i> ™, Short Step – High Skid, LH
			X					D350-591-214	<i>Heli-Access-Step</i> ™, Short Step – High Skid, RH
				X				D350-591-215	<i>Heli-Access-Step</i> ™, Short Step – Low Skid, LH
					X			D350-591-216	<i>Heli-Access-Step</i> ™, Short Step – Low Skid, RH
						X		D350-591-311	<i>Heli-Access-Step</i> ™, Long Step – High Skid, LH
							X	D350-591-312	<i>Heli-Access-Step</i> ™, Long Step – High Skid, RH
1								D3070-041	STEP ASSEMBLY (HIGH-LONG, LH)
	1							D3070-042	STEP ASSEMBLY (HIGH-LONG, RH)
		1						D3078-041	STEP ASSEMBLY (HIGH-SHORT, LH)
			1					D3078-042	STEP ASSEMBLY (HIGH-SHORT, RH)
				1				D3168-041	STEP ASSEMBLY (LOW-SHORT, LH)
					1			D3168-042	STEP ASSEMBLY (LOW-SHORT, RH)
						1		D3272-041	STEP ASSEMBLY (HIGH-LONG, LH)
							1	D3272-042	STEP ASSEMBLY (HIGH-LONG, RH)
4	4							D2182B035	RUBBER CUSHION
		(2)	(2)	2	2			D2230-1	MOUNTING LUG
		(2)	(2)	2	2	4	4	D2230-3	MOUNTING LUG
8	8							D2274	RADIUS BLOCK
						2	2	D2618	BUSHING
4	4	(4)	(4)	4	4			D2732-030	CUSHION
2	2	(1)	(1)	1	1	2	2	D2856-400-720	ABRASION STRIP
2	2							D3064-1	CLAMP
1	1							D3079-041	SUPPORT ASSEMBLY
4	4							D3080-1	CLAMP
						2	2	D3235-1	MOUNTING LUG
						1	1	D3278-041	SUPPORT ASSEMBLY
2	2	(2)	(2)	2	2	2	2	AN3-35A	BOLT
10	10	2	2	2	2			AN4-11A	BOLT
		(4)	(4)	4	4	8	8	AN4-13A	BOLT
						2	2	AN5-36A	BOLT
4	4	(4)	(4)	4	4	4	4	AN960JD10	WASHER
20	20	(12)	(12)	12	12	16	16	AN960JD416	WASHER
						4	4	AN960JD516	WASHER
2	2	(2)	(2)	2	2	2	2	MS21042L3	NUT
10	10	(6)	(6)	6	6	8	8	MS21042L4	NUT
						2	2	MS21042L5	NUT
						1	1	*DSI 9410-011	STEP MODIFICATION KIT

\*DSI 9410-011 Step Modification Kits are provided with all D350-591-311 and D350-591-312 Steps. This kit is provided as an option for the installer and is therefore **NOT REQUIRED** to complete the installation of the D350-591-311 or D350-591-312 Steps. Refer to Figure 21 for installation of the DSI 9410-011 Kit.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Qty -211	Qty -212	Qty -213	Qty -214	Qty -215	Qty -216	Qty -311	Qty -312	Part Number	Description
X								D350-591-211	<b>Heli-Access-Step™</b> , Long Step – High Skid, LH
	X							D350-591-212	<b>Heli-Access-Step™</b> , Long Step – High Skid, RH
		X						D350-591-213	<b>Heli-Access-Step™</b> , Short Step – High Skid, LH
			X					D350-591-214	<b>Heli-Access-Step™</b> , Short Step – High Skid, RH
				X				D350-591-215	<b>Heli-Access-Step™</b> , Short Step – Low Skid, LH
					X			D350-591-216	<b>Heli-Access-Step™</b> , Short Step – Low Skid, RH
						X		D350-591-311	<b>Heli-Access-Step™</b> , Long Step – High Skid, LH
							X	D350-591-312	<b>Heli-Access-Step™</b> , Long Step – High Skid, RH
1								D3070-041	STEP ASSEMBLY (HIGH-LONG, LH)
	1							D3070-042	STEP ASSEMBLY (HIGH-LONG, RH)
		1						D3078-041	STEP ASSEMBLY (HIGH-SHORT, LH)
			1					D3078-042	STEP ASSEMBLY (HIGH-SHORT, RH)
				1				D3168-041	STEP ASSEMBLY (LOW-SHORT, LH)
					1			D3168-042	STEP ASSEMBLY (LOW-SHORT, RH)
						1		D3272-041	STEP ASSEMBLY (HIGH-LONG, LH)
							1	D3272-042	STEP ASSEMBLY (HIGH-LONG, RH)
4	4							D2182B035	RUBBER CUSHION
		2	2	2	2			D2230-1	MOUNTING LUG
		2	2	2	2	4	4	D2230-3	MOUNTING LUG
8	8							D2274	RADIUS BLOCK
						2	2	D2618	BUSHING
4	4	4	4	4	4			D2732-030	CUSHION
2	2	1	1	1	1	2	2	D2856-400-720	ABRASION STRIP
2	2							D3064-1	CLAMP
1	1							D3079-041	SUPPORT ASSEMBLY
4	4							D3080-1	CLAMP
						2	2	D3235-1	MOUNTING LUG
						1	1	D3278-041	SUPPORT ASSEMBLY
2	2	2	2	2	2	2	2	AN3-35A	BOLT
10	10	2	2	2	2			AN4-11A	BOLT
		4	4	4	4	8	8	AN4-13A	BOLT
						2	2	AN5-36A	BOLT
4	4	4	4	4	4	4	4	AN960JD10	WASHER
20	20	12	12	12	12	16	16	AN960JD416	WASHER
						4	4	AN960JD516	WASHER
2	2	2	2	2	2	2	2	MS21042L3	NUT
10	10	6	6	6	6	8	8	MS21042L4	NUT
						2	2	MS21042L5	NUT
						1	1	*DSI 9410-011	STEP MODIFICATION KIT

\*DSI 9410-011 Step Modification Kits are provided with all D350-591-311 and D350-591-312 Steps. This kit is provided as an option for the installer and is therefore **NOT REQUIRED** to complete the installation of the D350-591-311 or D350-591-312 Steps. Refer to Figure 21 for installation of the DSI 9410-011 Kit.

• COPYRIGHT © 2002 BY DART AEROSPACE LTD. •  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

32-00-00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## 32.6 PARTS LIST

Qty -111A	Qty -113	Qty -115	Qty -117A	Qty -119	Qty -133	Part Number	Description
X						D350-591-111A	<i>Heli-Access-Step</i> ™, Long Step – High Skid
	X					D350-591-113	<i>Heli-Access-Step</i> ™, Short Step – High Skid
		X				D350-591-115	<i>Heli-Access-Step</i> ™, Short Step – Low Skid
			X			D350-591-117A	<i>Heli-Access-Step</i> ™, Pre-Flight Step
				X		D350-591-119	<i>Heli-Access-Step</i> ™, Long Step – Low Skid
					X	D350-591-133	<i>Heli-Access-Step</i> ™, Aft Maintenance Step
	1					D2310	STEP ASSEMBLY (HIGH-SHORT)
1						D2311	STEP ASSEMBLY (HIGH-LONG)
		1				D2354	STEP ASSEMBLY (LOW-SHORT)
				1		D2355	STEP ASSEMBLY (LOW-LONG)
					1	D2946-041	STEP ASSEMBLY (MAINTENANCE)
4	2	2	2	2		D2171	CLAMP
4	2	2	2	2		D2182B035	CUSHION
					4	D2230-1	MOUNTING LUG
					4	D2230-3	MOUNTING LUG
8	4	4	4	4		D2274	RADIUS BLOCK
			1			D2362-041	SUPPORT BRACKET
2	1			1		D2362-3	SUPPORT BRACKET
		1				D2362-5	SUPPORT BRACKET
2	1	1	1	1	2	D2856-400-720	ABRASION STRIP
					1	D2945	MOUNTING PLATE
2	2	2		2		AN3-37A	BOLT
					2	AN4-7A	BOLT
					4	AN4-11A	BOLT
					8	AN4-14A	BOLT
		4				AN4-16A	BOLT
8	4			4		AN4-20A	BOLT
1	1	1	4	1		AN4-22A	BOLT
4	4	4		4		AN960JD10	WASHER
10	6	2	4	6	14	AN960JD416	WASHER
		4				AN960JD416L	WASHER
2	2	2		2		MS21042L3	NUT
9	5	5	4	5	14	MS21042L4	NUT

Qty -121	Qty -122	Qty -123	Qty -124	Part Number	Description
X				D350-591-121	<i>Heli-Access-Step</i> ™, Short Step – High Skid, LH
	X			D350-591-122	<i>Heli-Access-Step</i> ™, Short Step – High Skid, RH
		X		D350-591-123	<i>Heli-Access-Step</i> ™, Short Step – Low Skid, LH
			X	D350-591-124	<i>Heli-Access-Step</i> ™, Short Step – Low Skid, RH
1				D2351-041	STEP ASSEMBLY (HIGH-SHORT, LH)
	1			D2351-042	STEP ASSEMBLY (HIGH-SHORT, RH)
		1		D2356-041	STEP ASSEMBLY (LOW-SHORT, LH)
			1	D2356-042	STEP ASSEMBLY (LOW-SHORT, RH)
1	1	1	1	D2230-1	MOUNTING LUG
1	1	1	1	D2230-3	MOUNTING LUG
1	1	1	1	D2856-400-720	ABRASION STRIP
2	2	2	2	AN3-37A	BOLT
3	3	3	3	AN4-13A	BOLT
4	4	4	4	AN960JD10	WASHER
6	6	6	6	AN960JD416	WASHER
2	2	2	2	MS21042L3	NUT
3	3	3	3	MS21042L4	NUT

• COPYRIGHT © 2002 BY DART AEROSPACE LTD. •  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR  
COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

32-00-00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries